Bancroft District Fisheries Management Plan

1987-2000

Draft

Ontario

Ministry of Natural Resources

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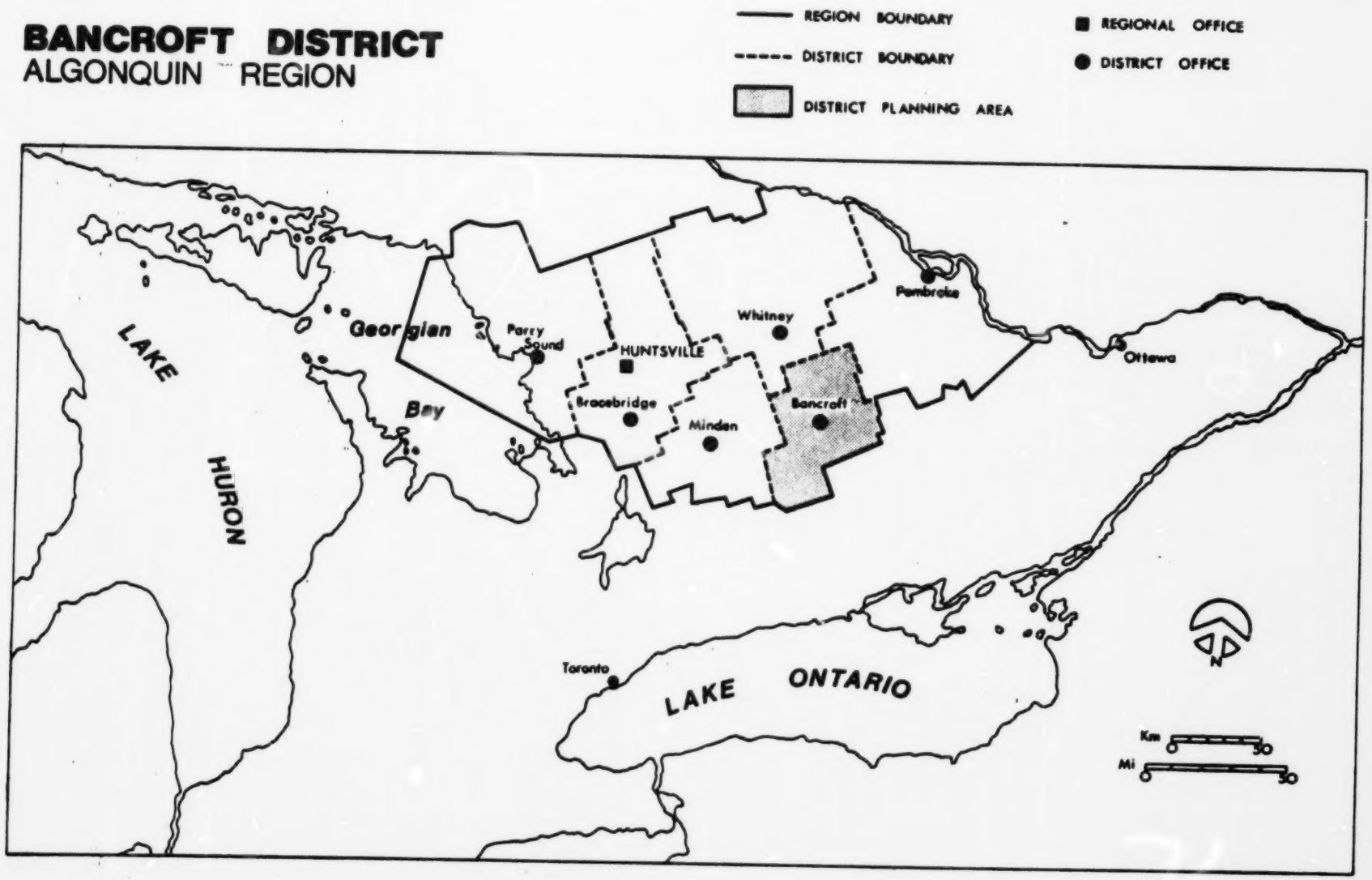
BANCROFT DISTRICT
ALGONQUIN REGION



Preface

This Draft Fisheries Management Plan was prepared to provide both long-term and short-term (5 year) direction for the management of the fisheries resource of Bancroft District to the year 2000.

This plan was developed in accordance with the Bancroft District Land Use Guidelines, the information contained in the District's Background Information and Optional Management Strategies and Tactics document, public consultation and accepted fisheries management principles and practices. The Fisheries Management Plan will provide a means by which the Bancroft District fisheries management program can be measured by both local fisheries managers and the public.

The public will have the opportunity to comment upon the management direction set out in this draft Plan before it is adopted by the Ministry of Natural Resources.

Regional Director

District Manager

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1.0 INTRODUCTION

1.1 Purpose

This draft Fisheries Management Plan is designed to co-ordinate and guide fisheries management efforts in the Bancroft District to the year 2000. It will contribute towards effectively building healthy fish populations and in turn, providing maximum recreational and economic opportunities.

The Plan identifies the strategies and tactics that will be used to manage the fisheries resource and maps out a specific short-term implementation schedule for the first five years of the Plan.

1.2 Planning Process, Existing Policy and Technical Direction

The Fisheries Management Plan has been prepared in accordance with the Ministry's land use and resource management planning system. The Southern Ontario Co-Ordinated Program Strategy provided general policies, targets and guidelines for resource management in Southern Ontario. The Bancroft District Land Use Guidelines followed that policy direction and in turn provided targets and objectives for fisheries and other resource management programs.

Within the framework of these initiatives, this Fisheries Management Plan has been developed utilizing accepted fisheries management principles as identified in the Strategic Planning for Ontario Fisheries documents.

The Plan highlights some of the background studies and analyses undertaken as part of the fisheries management planning process. Supporting documents that were prepared prior to the development of this Plan are listed below:

- Terms of Reference - provided direction and a timetable for the completion of each stage of the planning process;
- Background Information (Resource Inventory and Analysis) and Identification and Evaluation of Management Options - provided comprehensive examination of all available information pertaining to the management of the local fisheries resource;
- Background Information and Optional Management Strategies and Tactics, A Summary - assisted the public in providing input concerning optional management strategies and tactics;

- A Summary of Public Response to Bancroft District Background Information and Optional Management Strategies and Tactics - presented the results of the public consultation initiative.

These documents, which helped form the basis for this Plan, are available at the Bancroft District Office.

The Plan recognizes the Ministry's commitment to integrated resource management and public involvement. Background data compilation and analysis considered the interactions that occur between fisheries and other resource programs. Interest groups and the general public were encouraged to review the Background Information and Optional Management Strategies and Tactics Summary during the summer of 1986. Overall, public response indicated very strong support for the suggested strategies and general agreement with the tactics. Written comments received indicated three main concerns:

- the need for increased fisheries enforcement;
- the need for increased public education and involvement in fisheries management;
- the need for increased harvest controls.

Public input was summarized and influenced the development of management strategies and tactics used in this Plan. A synopsis of the comments offered by the public is available in Appendix 1.

2.0 DISTRICT FISHERIES PERSPECTIVE

2.1 The Setting

Bancroft District, one of the six administrative districts in the Algonquin Region, covers an area of 4,359 square kilometers or 1,683 square miles.

It lies predominantly on the Precambrian Shield and is part of the Northern Great Lakes/St. Lawrence watershed. Lakes and streams in the north half of the District drain eastward into the Ottawa River via the York, Little Mississippi and Madawaska Rivers. The remaining waters drain southward into the Trent River and Lake Ontario.

The rugged landscape typical of Bancroft District contains numerous streams and small lakes. The shallow, sandy soils over Precambrian bedrock are relatively unproductive. A band of quartzite or limestone runs

through the south-central portion of the District. These features have contributed to the formation of the fisheries resource that currently exists in the Bancroft District.

There are 824 lakes and 97 rivers/streams in the Bancroft District. They cover 29,553 hectares (295 square kilometers), which represents approximately seven percent of the total District area (Figure 1, back cover pocket). These waters provide a variety of sport fishing experiences. While lake trout, brook trout and rainbow trout (coldwater fisheries) attract the greatest proportion of angler interest, many waters offer fishing opportunities for bass, walleye, muskellunge and yellow perch (warmwater fisheries). Other species such as lake herring, burbot, bullhead and panfish provide additional angling opportunities. Commercial fishing in the District is restricted to the bait fish industry.

Approximately 14,400 people reside year round in the Village of Bancroft and surrounding small communities such as Cardiff, Maynooth, Apsley and Coe Hill. There is approximately a fifty/fifty split between crown and patent (private) land within the District.

2.2 The Resource

The proximity of Bancroft District to densely populated Southern Ontario has contributed to it becoming a popular summer and winter recreation area. The broad mixture of coldwater and warmwater fishing opportunities offered by the District adds to its popularity and assists in providing social and economic benefits.

A summary of the District's fisheries resource capabilities is presented in Table 1. The allowable harvest represents the best current estimate of the number of kilograms of fish available annually to the angler, while allowing for the maintenance of fish stocks.

Allowable harvests for coldwater and warmwater fisheries are 17,300 kg/yr and 69,300 kg/yr respectively. These values are used in assessing the District's resource base capabilities.

2.3 Resource Use and Projections

Sport Fishery - Bancroft District currently provides an estimated 223,300 angling opportunities[1] for coldwater and warmwater species annually (Table 1). This estimate

[1]One angling opportunity is the equivalent of four man-hours fishing.

TABLE 1: Resource Use Summary and Target Testing

RESOURCE	CURRENT USE		ANTICIPATED DEMAND BY YEAR 2000		DLUG TARGET		RESOURCE BASE[8] CAPABILITIES		INTERIM REFINED TARGET	
	Opportunities[4]	Harvest (kg)	Opportunities[5]	Harvest (kg)	Opportunities	Harvest (kg)	Opportunities	Allowable Harvest	Opportunities	Harvest (kg)
Sport Fishery										
Coldwater[1]	133,000	26,900	153,000	30,900			86,500	17,300	86,500	17,300
Warmwater[2]	90,300	19,900	103,800	22,900			138,700	69,300	138,700	69,300
Other Species[3]	-	-	-	-			-	-	31,600[9]	-
Total	223,300	46,800	256,800	53,800[6]	730,000[7]	-[10]	225,200	86,600	256,800	86,600

1 Coldwater resource includes: lake trout, brook/rainbow trout, splake, lake whitefish and non-producing coldwater lakes and streams.
2 Warmwater resource includes: walleye, bass, muskellunge/N. Pike, yellow perch, non-producing warmwater and unknown waters.
3 Other species resource includes: lake herring, suckers, rock bass, pumpkinseed, burbot (ling), etc.
4 Based on Bancroft District current creel surveys (one opportunity equals 4 hours fishing).
5 Based on current use plus 15% user increase.
6 At the current success rate, which is well below Provincial angling quality standard. If success rate meets the angling standard, harvest will approach the allowable harvest.
7 The DLUG target requires refinement to realistically reflect the fisheries resource base capabilities.
8 Represents available opportunities if all waters were producing at full potential. Based on allowable harvest and provincial angling quality standard of 0.2 and 0.5 kg/opportunity for cold and warmwater respectively.
9 The biological potential of other species such as lake herring, rock bass, suckers, etc., is difficult to estimate; however, it is estimated that these species can provide a minimum of 31,600 angling opportunities.
10 D.L.U.G. did not establish a harvest (kg) target.

Note: The Commercial Fishery in Bancroft District is restricted to the bait fish industry. Current use of the bait fish fishery is a harvest of 60,000 to 90,000 dozen per year. The DLUG target for baitfish is 87,000 dozen, which becomes the interim refined target for the bait fish industry in Bancroft District.

is the best available, utilizing recent District and Assessment Unit creel survey data. Other species such as panfish, burbot (ling), suckers and lake herring, etc., provide many thousands of additional angling opportunities annually; however, specific estimates for these species are unavailable.

Anglers in the Bancroft District presently harvest 46,800 kg of game fish per year. Approximately 57% of this harvest consists of coldwater species.

Ontario residents comprise the majority (91%) of the anglers fishing in the District. Most of the remaining 9% are from the United States.

Demand for angling opportunities is expected to increase 15% by the year 2000 to approximately 256,800 angler opportunities per year. If angler preference and the quality of angling remain the same as they are today, projected harvest is estimated at 53,800 kilograms of game fish; however, if the quality of angling improves to meet the Provincial angling quality standards (.2 and .5 kg of cold/warmwater fish respectively per angling opportunity), the harvest will approach the District's resource base capability of 86,600 kg/yr (total allowable harvest). This suggests that the fisheries resource base can meet the projected demand; however, it assumes that the resource is producing to its full potential, which it currently is not. As well, current use and projected demand for coldwater species far exceeds the resource base capabilities. Much of the total demand will have to be met through warmwater angling opportunities and/or angling species which are less popular; e.g. panfish, burbot. Specific details concerning the supply/demand analysis are available in the Background Information (Resource Inventory and Analysis) document at the District Office.

Bait Fishery - There are currently 32 licenced bait fish harvesters within the Bancroft District. Annual returns indicate harvests ranging between 60,000 and 90,000 dozen per year, having an average estimated gross value of $64,000 per year. At present, no appropriate method of determining bait fish productivity exists. It is reasonable that as the demand for sport fishing opportunities increases, so will the demand for bait fish. Although no accurate inventory data exist, the bait fish resource in the Bancroft District is thought to have the potential to support increased utilization.

2.4 Other Resource Concerns

In addition to specific fisheries data, other types of information, such as access road construction, canoe routes, water level control and access points were considered to help ensure this Plan's compatibility with other resource concerns. This information was incorporated into the Background Information document which is available at the Bancroft District Office.

Some waterbodies in the District are of special concern or importance to the fisheries program due to their sensitivity to environmental change and/or because they are being studied for intensive management purposes. A listing of those waterbodies has been appended to this Plan. This includes the District's known coldwater lakes and streams (Appendix 2), District warmwater study lakes and the Haliburton-Hastings Fisheries Assessment Unit study lakes that are located in the District (Appendix 3). This information is used on a regular basis by other services; e.g. forest management, forest fire prevention, lands and parks, when compiling and/or reviewing operational plans, work applications, etc.

2.5 Problems

To meet the primary target of providing 256,800 angling opportunities by the year 2000, at a reasonable level of angling quality, there are seven distinct problems and issues which must be addressed. Some of these are readily apparent and there is an obvious link between the problems and target achievement. Others are less obvious, but they too will affect the District's ability to meet the target.

The seven primary problems and issues affecting fisheries in Bancroft District are summarized below:

·Overharvest

Bancroft District has a limited amount of habitat which can support coldwater fish communities. Coldwater species are extremely popular and are avidly sought after by local residents and visitors alike. The present harvest and anticipated demand for coldwater fishing opportunities throughout the District on lakes such as Bay, Anstruther and Eels, exceeds the carrying capacity of the resource. There is some concern that this problem may also be occurring on a few warmwater lakes. This situation can lead to the collapse and possible extinction of desirable populations, community imbalance and to the proliferation of less desirable species, which in turn will seriously affect our ability to meet our fisheries target.

·Loss of Valuable Fisheries

In a number of lakes throughout the District, some important fisheries have been lost or seriously stressed. In recent years, a combination of factors such as habitat loss, heavy angling pressure and the unwanted introduction of non-indigenous or competitive species has put increasing stress on a limited fisheries resource. Although the losses have been best documented in lake trout fisheries; e.g. Jack, Monck, Steenburg and Gin Lakes, they are also occurring in brook trout and walleye populations across the District.

Although attempts to maintain and rehabilitate native fish populations are ongoing, the loss of game fisheries remains a very serious problem which must be addressed. Failure to take appropriate corrective actions will result in the continued erosion of the District fisheries base and make it impossible to meet the fisheries target.

·Underproducing Waters

Many waters throughout the District are not producing the quantity and quality of game fish of which they are capable. While there are numerous factors contributing to this problem, the two main causes are thought to be habitat deterioration and excessive fishing pressure. This situation is thought to be affecting a large number of coldwater and warmwater fisheries throughout the District. Lake trout (Cashel Lake), walleye (Baptiste and Lower Paudash Lakes) and brook trout (Ties Lake) are the species most seriously affected. To a lesser degree, the problem is also felt to be occurring on some of the small bass lakes throughout the District. This is a serious problem that must be resolved if the District is to meet its target commitments.

·Dependence on Hatchery Fish

Fish stocking is a management technique used in many lakes throughout Bancroft District to assist in maintaining and rehabilitating depleted natural stocks and to provide supplemental angling opportunities through the creation of artificial (non-reproducing) fisheries. The high cost and vagaries of the provincial hatchery system sometimes restrict the size, quantity and species of hatchery fish available. Current efforts are directed at improving strains and sizes to enhance stocking success; however, it must be recognized that stocking is not always a cure-all and that alternative ways of meeting angler demand are needed.

·Lack of an Adequate Data Base and Scientific Knowledge

Many of the aquatic ecosystems throughout the Bancroft District are diverse and complex. A broad data base, detailing key aspects of these systems is required if fisheries managers are to accurately diagnose the condition and status of the local resource, and prescribe appropriate management procedures.

As conditions deteriorate and become more complicated, the lack of a good data base and/or scientific knowledge becomes more critical and can result in an unnecessarily long rehabilitation process or even the further deterioration of the resource. This will ultimately result in the loss of fishing opportunities that are required to meet angler demand.

·Underutilized Species

A number of fish species, such as yellow perch, rock bass, lake herring, suckers and burbot (ling), are common throughout the District, but are generally overlooked by anglers. Although these species could support significant increases in angler pressure, they are consistently ignored in favour of the more traditional target species, such as lake trout, brook trout and walleye. In some instances, underutilized species out-compete more popular species, causing undesirable changes in fish community structure. Such is the case in lakes like Chandos, Papineau and Baptiste. To a certain degree, underutilization of warmwater species, such as bass, is thought to occur in lakes which have no public access or are difficult to reach. Increased angler interest in underutilized species is required if future demands for angling opportunities are to be met.

·Lack of Public Awareness and Involvement

Many members of the public are unaware of the basic concepts of fisheries ecology and management. To a degree, this has been caused by the lack of effective fisheries education, information and public involvement programs in the District. This has had a number of negative effects, such as removal or destruction of critical spawning or nursery habitat, unrealistic expectations concerning the resource's productivity and a slow acceptance of important management proposals. The end result is a decrease in fish production and the loss of angling opportunities. This ultimately affects the District's ability to meet its fisheries target.

3.0 MANAGEMENT DIRECTION

This Plan is directed at building healthy fish populations which will provide maximum recreational and economic opportunities throughout the District. It focuses on improving and maintaining the local fisheries resource to ensure full production potential by the year 2000.

3.1 Objectives

Fisheries management programs must be compatible with the goals, objectives and overall direction of the Ministry of Natural Resources. To effectively manage all of the Province's natural resources, the following long-term goal has been established:

- to provide opportunities for outdoor recreation and resource development for the continuous social and economic benefit of the people of Ontario and to administer, protect and conserve public lands and waters.

To provide a focus for management activities across Southern Ontario, the following objective was established for the fisheries management program:

- to provide opportunities for recreation and economic benefits consistent with the maintenance of healthy fish communities.

More specific fisheries program objectives for Bancroft District were developed during the formulation of the District Land Use Guidelines. They are:

- to meet demand within the limits of a wisely-managed and rehabilitated resource;
- to maintain current bait fish production; and,
- to prevent the extinction of any native fish species.

3.2 Targets

To assist in meeting the District's fisheries objectives, targets were established in the Bancroft District Land Use Guidelines. During the formulation of this Plan, those targets were refined and re-developed to better relate the objectives to the biological capabilities of the local fisheries resource.

If Bancroft District is to fulfill its fisheries objectives, the following targets must be met:

Sport Fish Target

- to provide 256,800 angling opportunities at a harvest level of 86,600 kg annually by the year 2000.

  Coldwater Species - to provide 86,500 angling opportunities at a harvest level of 17,300 kg annually by the year 2000.

  Warmwater Species - to provide 138,700 angling opportunities, at a harvest level of 69,300 kg annually, by the year 2000.

  Other Species - to provide a minimum of 31,600 angling opportunities annually by the year 2000.

Bait Fish Target

- to provide for a harvest of 87,000 dozen bait fish by the year 2000.

Provincially Rare and Endangered Species Target

- to ensure no native fish species become extinct.

3.3 Problems

Earlier phases of this planning initiative highlighted the fact that the District's fisheries resource base is not producing at full potential and that a major shortfall in coldwater fishing opportunities exists now and will continue to exist in the future. To ensure that overall demand for angling opportunities is met, it is imperative that excess pressure on coldwater species be diverted towards alternative fisheries, that all coldwater and warmwater fisheries (non-producing and/or underproducing) be brought into full production, that all key game fish populations and critical habitat be protected, and that other species such as lake herring, panfish, suckers, etc., provide a minimum of 31,600 angling opportunities. Recognition of these facts led to the identification of the seven key problems discussed in Section 2.5 of this Plan. They are:

- Overharvest;
- Loss of Valuable Fisheries;
- Underproducing Waters;
- Dependence on Hatchery Fish;
- Lack of an Adequate Data Base and Scientific Knowledge;
- Underutilized Species;
- Lack of Public Awareness and Involvement.

In order for the fisheries resource to reach full potential and meet District targets and objectives, these problems must be resolved. Owing to the diverse nature of the problems, no single approach is appropriate. In addition, the inherent characteristics of waterbodies; such as lake depth, oxygen content and existing fish community, often dictate the management actions that can be applied.

3.4 Strategies and Tactics

Achievement of the objectives and targets will involve implementation of a wide range of diverse strategies and tactics. Strategies are general action plans designed to address problems. Tactics are specific management projects devised to achieve particular strategies. Fisheries Program Policies and the Bancroft District Land Use Guidelines provide certain general strategies to guide the fisheries program. The basic thrust of these is:

- to protect, maintain and rehabilitate fish habitat;
- to promote and protect natural reproducing fish populations;
- to provide artificial coldwater fisheries;
- to control and prevent stresses from affecting fisheries;
- to assess the results of fisheries management actions; and,
- to actively involve the public in fisheries management.

A number of more specific strategies have been selected to address the key problems affecting the District's fisheries. The effective implementation of these strategies will ensure that the District's fisheries targets are met and that its objectives are fulfilled. They are presented below, with respect to the problem they address:

PROBLEM - <u>OVERHARVEST</u>

Strategies:

- Control harvest where required by introducing appropriate legislation related to seasons and limits, increasing the effectiveness of fisheries enforcement and exploring alternative harvest control methods.

- Enhance existing fish populations by identifying, rehabilitating and protecting critical fish habitat and key fisheries.

- Create more coldwater fisheries by stocking the appropriate species (lake trout, splake, rainbow trout and brook trout) in waters having coldwater potential, but which are presently barren or underproducing.

- Promote use of underutilized/less popular fish species by stimulating angler interest through youth derbies for less popular species, extensive public information and expanded opportunities to catch less popular species.

- Disperse angling pressure to less utilized lakes by increasing angler accessibility to and interest in these waters.

PROBLEM - LOSS OF VALUABLE FISHERIES

Strategies:

- Prevent any further decline of key game fish populations or genetic stocks by identifying these situations, assessing and correcting their causes, educating the public regarding the implications of shoreline alterations and unauthorized fish transfers and by promoting special regulations to restrict harvest when required.

- Maintain or improve key game fish populations or communities and protect genetic stocks by rehabilitating habitat, monitoring and controlling harvest, and increasing enforcement.

PROBLEM - UNDERPRODUCING WATERS

Strategies:

- Protect and rehabilitate natural reproducing fish populations in underproducing waters by identifying and addressing stresses such as habitat degradation, overharvest, and species competition.

- Protect, enhance and rehabilitate critical fish habitat by documenting and rebuilding degraded fish habitat, and effectively enforcing habitat protection legislation.

- Utilize the fisheries production potential in presently barren/underproducing waters by introducing coldwater/warmwater fish species in appropriate waters to bring these waters to full production and by assisting landowners in the establishment of sports fisheries in private waters.

- Rehabilitate degraded fish communities by restoring the balance between game fish and less popular species through M.N.R./C.F.I.P. projects such as lake reclamation, live bait restrictions, and by encouraging the use of less popular species.

PROBLEM - DEPENDENCE ON HATCHERY FISH

Strategies:

- Promote and establish self-reproducing fisheries to reduce dependence upon hatchery-reared fish by protecting natural fisheries from excessive harvest levels, promoting the stocking of species that will reproduce naturally and by rehabilitating deteriorated spawning habitat.

- Optimize the use of hatchery-reared fish by assessing and adjusting the stocking program to maximize stocked fish survival.

- Place the importance of fish stocking in the Bancroft District into perspective by assessing the results of stocking and informing the public as to the rationale of the fish stocking program.

- Promote public fisheries enhancement projects by stimulating interest in the Community Fisheries Involvement Programs.

- Encourage innovative fisheries enhancement projects which will reduce culture costs by implementing a donor lake system and experimenting with new culture concepts.

PROBLEM - LACK OF AN ADEQUATE DATA BASE AND SCIENTIFIC KNOWLEDGE

Strategies:

- Expand local District data base by monitoring representative lakes and significant fisheries, collecting data on unsurveyed waters and increasing angler participation in voluntary creel projects.

- Make effective use of new knowledge and technology by improving information transfer, implementing experimental management projects and computerizing the District's fisheries data base.

- Ensure research and assessment meets the needs of the District identifying local fisheries issues and encouraging research projects which will address these issues.

PROBLEM - UNDERUTILIZED SPECIES

Strategies:

- Promote use of underutilized species by increasing angler interest in these species through public information, fish derbies, innovative angling techniques and improved access.

PROBLEM - LACK OF PUBLIC AWARENESS AND INVOLVEMENT

Strategies:

- Involve the public in key aspects of fisheries management by improving communications with user groups and encouraging increased participation in C.F.I.P. projects and other volunteer programs.

- Educate the public with regard to fisheries ecology and the effects of stresses on fisheries by developing and implementing an effective public relations program consisting of pamphlets, educational displays and promotion of fisheries education in the school system.

- Promote co-operation among user groups by designing and distributing information packages for different user groups and encouraging regular meetings to discuss and/or resolve issues and potential conflicts as required.

During the review of the Background Information document most of the public's comments re-emphasized or gave strong support for the strategies identified in this Plan; however, one area of concern which the public felt required stronger emphasis was the need for increased fisheries enforcement.

This has resulted in the addition of the following strategy:

- Develop and implement a District Fisheries Enforcement Plan.

This strategy will be valuable in dealing with many of the District's key problems and in directing and increasing the effectiveness of fisheries enforcement throughout the District.

The above strategies will be achieved through specific management projects (tactics) that will be implemented during the life of the Plan. Those that will be used during the first five years are outlined in the following implementation section. They focus on the

rehabilitation, enhancement, protection and assessment of the District's sport fisheries. Tactics that are not identified in the first implementation schedule are listed in Appendix 4.

4.0 IMPLEMENTATION

4.1 General

This Plan will ensure that a well co-ordinated and effective fisheries management program is conducted in the Bancroft District. In addressing key problems, it will ensure that the District's fisheries targets and objectives are met and that the direction of fisheries management within the District is consistent with the Ministry's overall program goals and objectives.

The strategies and tactics identified in this Plan will be achieved through:

- the preparation of five-year implementation schedules;
- annual work plans consisting of specific projects and programs funded and approved through Ministry's budgeting process;
- participation in the planning and undertaking of other programs within the Ministry;
- co-operative management efforts with municipalities and individuals; and,
- the review of work plans and proposals from other government agencies and the private sector, whenever the opportunity is provided.

All fisheries management activities conducted in the District will contribute towards the targets and objectives established in this Plan.

The Plan is the responsibility of the District Manager and must be approved by the Regional Director. It will be reviewed at 5-year intervals or whenever major modifications are necessary. The public will have an opportunity to provide input during these reviews.

Occasionally, minor adjustments to the Plan, such as changing the location of tactic implementation or substituting another similar but more effective or efficient tactic may be required. As well, innovative, scientifically sound, management techniques that will enhance the fisheries resource may be developed during the life of the Plan. When these types of situations arise, they will be dealt with in a manner consistent with the directions and priorities identified in this Plan.

Fisheries management projects undertaken in accordance with this plan are subject to the requirements of The Environmental Assessment Act.

4.2 Implementation Schedule

Long-term management strategies and specific tactics that have been developed to resolve the District's key fisheries problems have been selected and presented in this Plan. The specific tactics that will be implemented over the first five years of the Plan (1987-1992) are listed in the implementation schedule which follows.

The specific work location and priority rating is indicated for each management activity. Priority 1 represents work which can be accomplished with present levels of funding and staffing. Work activities which will require additional funds and staff are listed as priority 2.

Annual fisheries work plans will be developed to reflect the tactics and priorities established in the implementation schedule.

Tactics have been carefully considered to ensure they will effectively implement the Plan's management strategies. The tactics incorporate an appropriate mixture of rehabilitation/enhancement, protection and assessment. Management initiatives, such as rebuilding spawning beds, reclaiming lakes and encouraging fisheries management projects through the Community Fisheries Involvement Program will reflect the rehabilitation and enhancement thrusts. Protection and assessment-related tactics, such as controlling dredging and filling, increasing the effectiveness of fisheries enforcement, and monitoring angler harvests, will also be implemented. Public education and involvement related tactics will complement all initiatives and help ensure the delivery of a strong, effective fisheries management program.

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Identify, monitor and protect critical fish habitat; e.g. spawning bed documentation and assessment..... 23

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Encourage anglers to submit volunteer creel forms..... 28

Encourage self-help programs and/or volunteer creel surveys..... 28

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Enforcement

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Habitat and Population Management

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Control dredging and filling which will impair or destroy critical fish habitat..... 29

Provide fisheries management advice and encourage establishment of sport fisheries in private waters..... 29

Restrict use of live bait in newly-reclaimed waters..... 29

Encourage fisheries enhancement projects through CFIP..... 29

Alter angling season..... 29

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Encourage and promote Youth Derbies for less popular species..... 30

Encourage catch/kill/use angling for less popular species; e.g. news releases re: recipes and angling techniques..... 30

Open/improve access through landowner agreements to underfished waters and/or lakes having good management potential..... 31

Initiate an experimental management project; e.g. investigate alternate year closure following stocking of brook trout to determine effectiveness in improving angling quality..... 31

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Convert marginal lake trout or brook trout lakes to splake..... 31

Stock hatchery-reared fish where they will give the best returns to anglers and/or meet specific management goals..... 31

Stock hatchery fish where required to:

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(b) rehabilitate existing fisheries..... 32

(c) supplement the fisheries..... 32

(d) produce artificial fisheries:

(i) put-grow-take..... 33

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Provide guidance and expertise to groups/individuals interested in establishing private, commercial hatcheries..... 36

PUBLIC EDUCATION AND INVOLVEMENT

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Inform and educate the public as to the rationale of the fish stocking program..... 36

Annually print and distribute the fish stocking list..... 36

Distribute news releases on key aspects of fisheries and fisheries programs..... 36

Set up educational displays at summer regattas..... 37

Institute regular meetings/open houses with key interest groups to update them on fisheries programs..... 37

Update fisheries information and educational booklets..... 37

Note: To indicate the relative significance of the above tactics to Bancroft District's fisheries program, each has been subjectively priorized and categorized by the District's fisheries staff (Appendix 5).

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE - 1987/1991

BANCROFT DISTRICT

PLANNING

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Monitor and review lakeshore development and other work plans and proposals	District Wide with special emphasis on lake trout and other coldwater fisheries.		X		•Enhance existing fish populations •Protect and rehabilitate natural reproducing fish populations	•Overharvest •Underproducing Waters
•Monitor and review water-related work applications	District Wide with special emphasis on lake trout and other coldwater fisheries.		X		•Enhance existing fish populations •Protect and rehabilitate natural reproducing fish populations	•Overharvest •Underproducing Waters
INVENTORY AND ASSESSMENT: Habitat and Population Evaluation						
•Continue to work with MOE to monitor and react to water quality changes	District Wide with special attention to lakes with coldwater fisheries		X		•Protect, enhance and rehabilitate critical fish habitat	•Underproducing Waters
•Initiate and maintain trend-through-time data on selected representative lakes and significant fisheries	Julian	Burleigh		X	•Expand local District data base	•Lack of an Adequate Data Base and Scientific Knowledge
	Whiteduck	Bangor		X		
	West Chain	Mayo		X		
	L. Cardiff	Cardiff		X		
	Steenburg	Limerick		X		
	Oak	Methuen		X		
	Saloon Trout	Monteagle		X		
	Jack	Methuen	X			
	Kasshabog	Methuen		X		
	Baptiste Chain	Herschel		X		
	Fraser	Carlow	X			
	L'Amable	Faraday		X		
	Silent	Cardiff	X			
	Eels	Anstruther	X			
	Anstruther	Anstruther	X			
	Wollaston	Wollaston	X			
	Faraday	Faraday		X		
	Bay	Faraday	X			
	Lk.St. Peter	McClure		X		
	Chandos	Chandos	X			
	Mephisto	Cashel		X		

INVENTORY AND ASSESSMENT: Habitat and Population Evaluation - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Organize and establish data base with respect to fish community type	District Wide		X		•Expand local District data base	•Lack of an Adequate Data Base and Scientific Knowledge
•Encourage research concerning:	Fisheries Assessment Units, MNR Fisheries Research Branch, and Universities				•Ensure research and assessment meets the needs of the District	•Lack of an Adequate Data Base and Scientific Knowledge
(a) the effects of rock bass on smallmouth and/or largemouth bass;			X			
(b) the effects of lake herring on lake trout;			X			
(c) alternate year closures following stocking of brook trout to determine effectiveness in improving the quality of angling;			X			
(d) practical and effective methods of controlling rock bass.			X			
•Determine factors limiting natural recruitment and eliminate or reduce these stresses	District type lakes and other lakes where problem becomes apparent; e.g. where water level control is an issue		X		•Protect and rehabilitate natural reproducing fish populations in underproducing waters	•Underproducing Waters
•Access knowledge and information from other districts, assessment units and outside agencies	Province Wide - as a problem or request arises - actively improve liaison within MNR and with outside agencies and groups to facilitate information exchange		X	X	•Make effective use of new knowledge and technology	•Lack of an Adequate Data Base and Scientific Knowledge
•Assess marginal lake trout and/or brook trout lakes	Cashel Centre Stoplog McGee	Cashel Cardiff Burleigh Burleigh	X X	 X X	•Create more coldwater fisheries •Prevent any further decline of key game fish populations or genetic stocks	•Overharvest •Loss of Valuable Fisheries

INVENTORY AND ASSESSMENT: Habitat and Population Evaluation - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Assess marginal lake trout and/or brook trout lakes - Cont'd	Triangle	Burleigh		X		
	Sucker	Anstruther	X			
	Mountain	Anstruther		X		
	Cherry	Burleigh		X		
	Cox	Burleigh		X		
	Shark	Burleigh		X		
	John	Limerick		X		
	Limestone	Mayo		X		
	Buck	Bangor	X			
	Mountain	Burleigh		X		
	Hound	Herschel		X		
	Blairs	Wicklow		X		
	Upr.Partridge	Cashel		X		
	Ledyard	Herschel		X		
	Card	Faraday		X		
	Baldcoot	Bangor		X		
	Coltson	Dungannon		X		
•Assess results of stocking and adjust stocking plan accordingly	Anstruther	Anstruther	X		•Optimize the use of hatchery-reared fish	•Dependence on Hatchery Fish
	Eels	Anstruther	X			
	Bay	Faraday	X			
	Silent	Cardiff	X			
	Faraday	Faraday	X			
	Chandos	Chandos	X			
	Wollaston	Wollaston	X			
	L.Paudash	Cardiff	X			
	Jack	Methuen	X			
	Baptiste Chain	Herschel	X			
	Hudson	Cardiff		X		
	L'Amable	Faraday		X		
	Lk.St. Peter	McClure		X		
	Mephisto	Cashel		X		
	Adams	Cardiff		X		
	Leathercot	Herschel		X		
	Aide	Cashel		X		
	Whiteduck	Bangor		X		
	West Chain	Mayo		X		
	Echo	Bangor		X		
	Dixie	Cardiff		X		
	Silversheen	McClure		X		
	Looncall	Anstruther		X		
	Urbach	Wollaston		X		

INVENTORY AND ASSESSMENT: Habitat and Population Evaluation - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Assess results of stocking and adjust stocking plan acordingly - Cont'd	Sleeper	Cashel		X		
	Monck	Cardiff		X		
	L. Cardiff	Cardiff		X		
	Colbourne	Cardiff		X		
	Lassuade	Chandos		X		
	Graphite	Monteagle		X		
	V	Mayo		X		
	Spring	Limerick		X		
•Identify and assess:					•Prevent further decline of key game fish populations or genetic stocks	•Loss of Valuable Fisheries
(a) threatened fisheries;	District Wide by examining data collected during monitoring and assessment programs		X			
(b) natural reproducing and/or genetic stocks	Cope Creek	Cardiff		X		
	Deer River	Wollaston		X		
	Allen Creek	Harcourt		X		
	Cannon Creek	Herschel		X		
	Elephant Creek	Harcourt		X		
	McGarry Creek	Herschel		X		
	Aide Creek	Cashel		X		
	Hestler Creek	Mayo		X		
	Rowland Creek	Mayo		X		
	Sharrow Creek	Mayo		X		
	Stringer Creek	Mayo		X		
	Whyte Creek	Mayo		X		
	L'Amable Creek	Dungannon		X		
	L.Papineau Ck.	Wicklow		X		
	Papineau Creek	Carlow		X		
	Back Creek	Wicklow		X		
	Boulter Creek	McClure		X		
	Green Creek	McClure		X		
	Mink Creek	McClure		X		
	Craigmont Ck.	Carlow		X		
	Buck	Bangor		X		
	Adams	Cardiff		X		
	Halls	Cardiff		X		
	Burleigh	Chandos		X		
	Eels Creek	Burleigh		X		
	Cheddar	Cardiff		X		
	Echo	Bangor		X		

INVENTORY AND ASSESSMENT: Habitat and Population Evaluation - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
(b) natural reproducing and/or genetic stocks - Cont'd	Birds Creek	Herschel		X		
	Leatheroot	Herschel		X		
	Egan Creek	Dungannon		X		
	Pat	McClure		X		
	Card	Faraday		X		
	Coltson	Dungannon		X		
	Hawk	Wicklow		X		
	Bronson	McClure		X		
	Goulais	McClure		X		
	McNab	McClure		X		
	Robison	McClure		X		
	Soaking	McClure		X		
	Hound	Herschel		X		
	L. Mayo	Mayo		X		
•Monitor important natural reproducing fisheries	District Wide as identified through assessment			X	•Promote and establish self-reproducing fisheries to reduce dependence upon hatchery-reared fish	•Dependence on Hatchery Fish
•Identify, monitor and protect critical fish habitat; e.g. spawning bed documentation and assessment	Farquhar	Harcourt	X		•Enhance existing fish populations •Protect, enhance and rehabilitate critical fish habitat •Promote and establish self-reproducing fisheries to reduce dependence upon hatchery-reared fish	•Overharvest •Underproducing Waters •Dependence on Hatchery Fish
	Grace	Harcourt	X			
	Buzzard	Burleigh		X		
	Pusey	Cardiff	X			
	Rathbun	Anstruther		X		
	Anstruther	Anstruther	X			
	Eels	Anstruther		X		
	Chandos	Chandos		X		
	Silent	Cardiff		X		
	Wollaston	Wollaston		X		
	Purdy	Bangor	X			
	Faraday	Faraday		X		
	Baptiste	Herschel		X		
	L'Amable	Faraday		X		
	Deer	Cardiff		X		
	Paudash	Cardiff		X		
	Hudson	Cardiff		X		
	Jeffrey	Faraday		X		
	Papineau	Bangor		X		
	Big Mink	McClure		X		
	Robison	McClure	X			
	Soaking	McClure	X			
	McNab	McClure	X			

INVENTORY AND ASSESSMENT: Habitat and Population Assessment - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Identify, monitor and protect critical fish habitat - Cont'd	Goulais	McClure	X			
	Bronson	McClure		X		
	Hawk	Wicklow		X		
	Boulter	McClure	X			
	Alder	Anstruther	X			
	Copper	Anstruther	X			
	Madawaska R.	Bangor	X			
	York R.	Carlow	X			
	L. Mississippi	Carlow	X			
	Jack	Methuen		X		
	Kasshabog	Methuen		X		
	Oak	Methuen		X		
	L. Paudash	Cardiff		X		
	Benoir	Harcourt		X		
	Elephant	Harcourt		X		
	Foster	Carlow		X		
	Salmon Trout	Monteagle		X		
	Fraser	Carlow		X		
	L. Mullet	Mayo		X		
	Mullet	Mayo		X		
	Coon	Burleigh	X			
	L. Long	Burleigh	X			
	Big Cedar	Burleigh		X		
	Julian	Burleigh	X			
	Wolf	Anstruther	X			
	West Twin	Methuen		X		
	Barrette	Methuen		X		
	Big Mountain	Methuen		X		
	Devils	Methuen		X		
	Long	Methuen		X		
	Methuen	Methuen		X		
	Sandy	Methuen	X			
	South	Methuen		X		

INVENTORY AND ASSESSMENT: Aquatic Habitat Inventory

Tactic	Location	Township	1	2	Strategies Implemented	Problems Addressed
•Conduct brief preliminary fisheries surveys on unknown waters and follow up with full aquatic surveys on those having management potential	Salmon	Herschel		X	•Create more coldwater fisheries •Expand local District data base	•Overharvest •Lack of an Adequate Data Base and Scientific Knowledge
	Hybla	Monteagle		X		
	Menzies	Carlow		X		
	Mud	Herschel		X		
	North Chainy	McClure		X		
	Luhes Pond	McClure		X		
	L. Pine	McClure		X		
	Pinery	McClure		X		
	Big Pt. Pond	Bangor		X		
	Biernacki	Bangor		X		
	Loon	Mayo		X		
	Sud	McClure		X		
	Anderson	Cardiff		X		
	L. McGarry	McClure		X		
	Smith	Mayo		X		
	L. Boulter	McClure		X		
	Lewis	Herschel		X		
	Lunan	Herschel		X		
	McCormick	Herschel		X		
	Huckleberry	Cardiff		X		
	Potter	Cashel		X		
	Shaw	Cashel		X		
	Bafoe	Cashel		X		
	Gilroy	Wollaston		X		
	James Pond	Bangor		X		
	Mud	Wicklow		X		
	Marshy	Herschel		X		
	Beaverskin	Cardiff		X		
	Twin	Anstruther		X		
	Upper Jimmy	Anstruther		X		
	Drurys Pond	Cardiff		X		
	Meadow	Bangor		X		
	Mountain	Bangor		X		
	Brisboise Pond	Bangor		X		
	Devericks	Carlow		X		
	Hoover	Carlow		X		
	Roybeck	Anstruther		X		
	L. Lourie	Cardiff		X		
	L. Mud	Faraday		X		
	Burke	Herschel		X		
	Cullin	Herschel		X		
	Hardwood	Herschel		X		

INVENTORY AND ASSESSMENT: Aquatic Habitat Inventory - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Conduct brief preliminary fisheries surveys - Cont'd	Snake	Herschel		X		
	Conlin	Faraday		X		
	L. Bow	Methuen		X		
	McKays	Anstruther		X		
	Reids	Anstruther		X		
	Mud	Anstruther		X		
	Long	Faraday		X		
	Goddard	Monteagle		X		
	Robinson	Carlow		X		
	Pond Lily	Cashel		X		
	L. Bear Pond	Dungannon		X		
	Pine	Faraday		X		
	McCastle Pond	Bangor		X		
	Mud Pond	Bangor		X		
	Sucker Pond	Bangor		X		
	Moore	Wicklow		X		
	L. Watson	Wicklow		X		
	Lansing Pond	Wicklow		X		
	Margarets Pond	McClure		X		
	Paddys Marsh	Wicklow		X		
	L. Mud	Cardiff		X		
	Bog	Burleigh		X		
	Hemlock	Burleigh		X		
	Red	Anstruther		X		
	Bow	Methuen		X		
	Bulrush	Burleigh		X		
	Church	Burleigh		X		
	L. McGee	Burleigh		X		
	Nogen Pond	Burleigh		X		
	Bog	Anstruther		X		
	Lindsay	Anstruther		X		
	Lost	Anstruther		X		
	Lower Jimmy	Anstruther		X		
	Johnson	Anstruther		X		
	Moose	Anstruther		X		
	Bog	Methuen		X		
	Mink	Faraday		X		
	Twin	Faraday		X		
	Imp	Methuen		X		
	Boundary	Cashel		X		
	Babycoot	Bangor		X		
	L. Tantha	Bangor		X		

INVENTORY AND ASSESSMENT: Aquatic Habitat Inventory - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Conduct brief preliminary fisheries surveys - Cont'd	Phillips	Bangor		X		
	Grace	Dungannon		X		
	Peever Pond	Bangor		X		
	Chip	Mayo		X		
	Robinson	Mayo		X		
	Rocky	Mayo		X		
	Twin #1	Mayo		X		
	Twin #2	Mayo		X		
	Finnigan	Faraday		X		
	Long	Limerick		X		
	McCallum	Wollaston		X		
	Cecil James P.	Bangor		X		
	Evans	Wicklow		X		
	Coffey	Bangor		X		
	Ribgrass	Wicklow		X		
	Barns	Cardiff		X		
INVENTORY AND ASSESSMENT: User Surveys						
•Monitor angler harvest	Anstruther	Anstruther	X		•Maintain or improve key game fish populations or communities and protect genetic stocks •Protect and rehabilitate natural reproducing fish populations in underproducing waters •Promote and establish self-reproducing fisheries to reduce dependence upon hatchery-reared fish	•Loss of Valuable Fisheries •Underproducing Waters •Dependance on Hatchery Fish
	Eels	Anstruther	X			
	Bay	Faraday	X			
	Silent	Cardiff	X			
	Faraday	Faraday	X			
	Chandos	Chandos	X			
	Wollaston	Wollaston	X			
	L. Paudash	Cardiff	X			
	Jack	Methuen	X			
	Baptiste Chain	Herschel	X			
	L'Amable	Faraday		X		
	Mephisto	Cashel		X		
	Tallan	Chandos		X		
	Jamieson	Dungannon		X		
	Rathbun	Anstruther		X		
	Holland	Dungannon		X		
	Hudson	Cardiff		X		
	Diamond	Herschel		X		
	Robinson	Limerick		X		
	Fraser	Carlow		X		
	Looncall	Anstruther		X		
	North	Wollaston		X		
	Monck	Cardiff		X		
	Sleeper	Cashel		X		
	Whiteduck	Bangor		X		
	West Chain	Mayo		X		

INVENTORY AND ASSESSMENT: User Surveys - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Monitor angler harvest - Cont'd	Upper Cardiff	Cardiff		X		
	Spring	Limerick		X		
	Graphite	Monteagle		X		
	V	Mayo		X		
	McWhirter	Carlow		X		
	Snow	Wollaston		X		
	Jordan	Cardiff		X		
	Urbach	Wollaston		X		
•Encourage anglers to submit volunteer creel forms	District Wide		X		•Expand local District data base	•Lack of an Adequate Data Base and Scientific Knowledge
•Encourage self-help programs and/or volunteer creel surveys	District Wide - on an as the opportunity arises basis; - on a proactive basis;		X	X	•Involve the public in key aspects of fisheries management	•Lack of Public Awareness and Involvement
OPERATIONS: Enforcement						
•Increase effectiveness of fisheries enforcement through the implementation of a District Fisheries Enforcement Plan	District Wide		X		•Control harvest where required •Prevent any further decline of key game fish populations or genetic stocks •Maintain or improve key game fish populations or communities and protect genetic stocks •Protect, enhance and rehabilitate critical fish habitat •Develop and implement a District Fisheries Enforcement Plan	•Overharvest •Loss of Valuable Fisheries •Underproducing Waters
•Continued enforcement of existing fisheries-related acts and regulations	District Wide		X		•Control harvest where required •Prevent any further decline of key game fish populations or genetic stocks •Maintain or improve key game fish populations or communities and protect genetic stocks •Protect, enhance and rehabilitate critical fish habitat •Develop and implement a District Fisheries Enforcement Plan	•Overharvest •Loss of Valuable Fisheries •Underproducing Waters

OPERATIONS: Habitat and Population Management

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Enhance/rehabilitate critical fish habitat through MNR and/or CFIP projects; e.g. spawning bed rehabilitation	Lavallee	Faraday	X		•Enhance existing fish populations •Maintain or improve key game fish populations or communities and protect genetic stocks •Protect, enhance and rehabilitate critical fish habitat •Promote and establish self-reproducing fisheries to reduce dependence upon hatchery-reared fish	•Overharvest •Loss of Valuable Fisheries •Underproducing Waters •Dependence on Hatchery Fish
	Dixon	Limerick	X			
	Baptiste	Herschel		X		
	Diamond	Herschel		X		
	Limestone	Mayo		X		
	L. Mayo	Mayo		X		
	Jamieson	Dungannon	X			
	John	Limerick		X		
	Jeffrey	Faraday		X		
	Purdy	Bangor	X			
	Brook Trout creeks identified through assessment of threatened fisheries or genetic stocks					
•Control dredging and filling which will impair or destroy critical fish habitat	District Wide		X		•Prevent any further decline of key game fish populations or genetic stocks •Maintain or improve key game fish populations or communities and protect genetic stocks •Protect and rehabilitate natural reproducing fish populations	•Loss of Valuable Fisheries •Underproducing Waters
•Provide fisheries management advice and encourage establishment of sport fisheries in private waters	District Wide - on a limited 'on request' basis; - on a proactive basis;		X	X	•Utilize the fisheries production potential in presently barren/ underproducing waters	•Underproducing Waters
•Restrict use of live bait in newly reclaimed waters	All lakes that are chemically reclaimed		X		•Rehabilitate degraded fish communities	•Underproducing Waters
•Encourage fisheries enhancement projects through CFIP; e.g. lake reclamation	District Wide - on a very limited 'on request' basis; - actively solicit CFIP projects;		X	X	•Rehabilitate degraded fish communities •Promote fisheries enhancement projects by the public •Involve the public in key aspects of fisheries management	•Underproducing Waters •Dependence on Hatchery Fish •Lack of Public Awareness and Involvement
•Alter angling season (Close winter and early spring fishery)	Allen	Harcourt	X		•Control harvest where required •Prevent any further decline of key game fish populations or genetic stocks	•Overharvest •Loss of Valuable Fisheries •Underproducing
	Farquhar	Harcourt	X			
	Fishtail	Harcourt	X			
	Jeffrey	Faraday	X			

OPERATIONS: Habitat and Population Management - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Alter angling season - Cont'd	Bay	Faraday	X		•Maintain or improve key game fish populations or communities and protect genetic stocks •Protect and rehabilitate natural reproducing fish populations in underproducing waters •Rehabilitate degraded fish communities •Promote and establish self-reproducing fisheries to reduce dependence on hatchery-reared fish	Waters •Dependence on Hatchery Fish
	L'Amable	Faraday	X			
	Lavallee	Faraday	X			
	Anstruther	Anstruther	X			
	Eels	Anstruther	X			
	Chandos Lake	Chandos	X			
	Tallan	Chandos	X			
	Mephisto	Cashel	X			
	Limerick	Limerick	X			
	Wollaston	Wollaston	X			
	Grace	Harcourt	X			
•Provide or expand opportunities for alternative means of fishing for underutilized species; e.g. bow and arrow for suckers during spring	District Wide		X		•Promote use of underutilized/less popular fish species	•Overharvest
•Chemically reclaim headwater lakes that have been lost to coarse fish Aconditional upon results of brook trout population assessment	Ties	Burleigh		X	•Create more coldwater fisheries •Rehabilitate degraded fish communities	•Overharvest •Underproducing Waters
	Grassy A	Mayo		X		
	North Chain A	Mayo		X		
	East Chain A	Mayo		X		
	and other lakes to be selected based on results of assessment projects			X		
•Encourage and promote Youth Derbies for less popular species	L. Paudash	Cardiff	X		•Promote use of underutilized/ less popular species	•Overharvest •Underutilized species
	Wollaston	Wollaston	X			
	Eels	Anstruther	X			
	Chandos	Chandos	X			
	and other lakes throughout District as need becomes apparent			X		
				X		
•Encourage catch/kill/use angling for less popular species; e.g. news releases re: recipes and angling techniques	District Wide - with special emphasis on lakes which are likely to benefit the most; e.g.			X	•Promote use of underutilized/ less popular species •Rehabilitate degraded fish communities •Prevent further decline of key game fish populations or genetic stocks	•Overharvest •Underproducing Waters •Loss of Valuable Fisheries
	Chandos	Chandos				
	Papineau	Bangor				
	Baptiste	Herschel				

OPERATIONS: Habitat and Population Management - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Open/improve access through landowner agreements to underfished waters and/or lakes having good management potential	District Wide		X		•Promote use of underutilized species •Disperse angling pressure to less utilized lakes	•Underutilized Species •Overharvest
•Initiate an experimental management project; e.g. investigate alternate year closure following stocking of brook trout to determine effectiveness in improving angling quality	District Wide - Lake to be selected at a later date		X		•Make effective use of new knowledge and technology	•Lack of an Adequate Data Base and Scientific Knowledge
•Establish or re-establish self-reproducing coldwater/warmwater fisheries in suitable waters	L. Paudash Baptiste Chain (walleye) and other suitable waters as identified through assessment	Cardiff Herschel		X X X	•Utilize the fisheries production potential in presently barren/underproducing waters •Promote and establish self-reproducing fisheries to reduce dependence on hatchery-reared fish	•Underproducing Waters •Dependence on Hatchery Fish
•Convert marginal lake trout or brook trout lakes to splake	Lakes to be identified via assessment			X	•Create more coldwater fisheries	•Overharvest
•Stock hatchery-reared fish where they will give the best returns to anglers and/or meet specific management goals; e.g. rehabilitation	District Wide		X		•Optimize the use of hatchery-reared fish	•Dependence on Hatchery Fish
•Stock hatchery fish where required to: (a) rehabilitate/supplement the fisheries (lake trout):	Chandos Papineau Anstruther Grace Mephisto Silent	Chandos Bangor Anstruther Harcourt Cashel Cardiff	X X X X X X		•Enhance existing fish populations •Prevent any further decline of key game fish populations or genetic stocks •Maintain or improve key game fish populations or communities and protect genetic stocks	•Overharvest •Loss of Valuable Fisheries •Underproducing Waters

OPERATIONS: Habitat and Population Management - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
(a) rehabilitate/supplement the fisheries - Cont'd	Farquhar	Harcourt	X		•Protect and rehabilitate natural reproducing fish populations •Utilize the fisheries production potential in presently barren/ underproducing waters •Create more coldwater fisheries	
	Lavallee	Faraday	X			
	Bay	Faraday	X			
	Eels	Anstruther	X			
	L'Amable	Faraday	X			
	Limerick	Limerick	X			
	Tallan	Chandos	X			
	Paudash	Cardiff	X			
	Wollaston	Wollaston	X			
	and other suitable waters identified through assessment			X		
(b) rehabilitate existing fisheries (Walleye):	Benoir	Harcourt		X		
	Elephant	Harcourt		X		
	Baptiste	Herschel		X		
(Lake Trout):	Purdy	Bangor	X			
	and other suitable waters identified through assessment			X		
(c) supplement the fisheries (Lake Trout):	Diamond	Herschel	X			
	Faraday	Faraday	X			
	Holland	Dungannon	X			
	Long	Burleigh	X			
	Pusey	Cardiff	X			
	Lk.St.Peter	McClure	X			
	Hudson	Cardiff	X			
	Rathbun	Anstruther	X			
	Sucker	Anstruther	X			
	L. Mayo	Mayo	X			
	L. Anstruther	Anstruther	X			
	Limestone	Mayo	X			
	Jamieson	Dungannon	X			
	Stoplog	Burleigh	X			
	Triangle	Burleigh	X			
	McGee	Burleigh	X			
	Buzzard	Burleigh	X			
	Mayo	Mayo	X			

OPERATIONS: Habitat and Population Management - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
(c) Supplement the fisheries - Cont'd	Big Mink	McClure	X			
	Deer	Cardiff	X			
	Cashel	Cashel	X			
	Center	Cardiff	X			
	Robinson	Limerick	X			
	Whyte	Mayo	X			
	and other suitable waters identified through assessment			X		
(Muskellunge):	Benoir	Harcourt	X			
	Julian	Burleigh	X			
	Kasshabog	Methuen	X			
	Methuen	Methuen	X			
	West Twin	Methuen	X			
	Wolf	Anstruther	X			
	Baptiste	Herschel	X			
	Elephant	Harcourt	X			
	and other suitable waters identified through assessment			X		
(d) produce artificial fisheries						
(i) put-grow-take (provide angling opportunities at a later date)						
(Brook Trout):	Adaes	Cardiff	X			
	L. Birch	Cashel	X			
	L. Lighthouse	Herschel	X			
	Big Lighthouse	Herschel	X			
	Silversheen	McClure	X			
	Swordfingal	Mayo	X			
	James	Bangor	X			
	Whiteduck	Bangor	X			
	Tommy's	Cashel	X			
	Burnt	Faraday	X			
	Cherrytree	Mayo	X			
	Curries	Cashel	X			
	Dixie	Cardiff	X			
	Inright	Wicklow	X			
	Jimmies	Dungannon	X			

OPERATIONS: Habitat and Population Management - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
(i) put-grow-take - Cont'd	Leatheroot	Herschel	X			
	Long	Cardiff	X			
	Mawson Pond	Cashel	X			
	McCormick	Bangor	X			
	Rock	Dungannon	X			
	Salty	Carlow	X			
	Tim	Herschel	X			
	Wicklow	Wicklow	X			
	Potash	Bangor	X			
	Mitchell	McClure	X			
	Aide	Cashel	X			
	Hall's	Cardiff	X			
	Hardings	Cardiff	X			
	Cedar	Dungannon	X			
	Egan Ck.	Dungannon	X			
	Faraday Ck.	Wollaston	X			
	Bentley Ck.	Dungannon	X			
	Bowen's Ck.	Dungannon	X			
	McGarry Ck.	McClure	X			
	Craigmont Ck.	Carlow	X			
	Grassy	Carlow	X			
	North Chain	Carlow	X			
	Spruce	Carlow	X			
	West Chain	Carlow	X			
	Dovetail	Carlow	X			
	East Chainy	McClure	X			
	Echo	Bangor	X			
	Meach	McClure	X			
	Pat	McClure	X			
	Burleigh	Chandos	X			
	Davis Pond	Wicklow	X			
	Hicks	Bangor	X			
	Johnson	Wicklow	X			
	Gil	Anstruther	X			
	Lk. on the Mountain	Herschel	X			
	Mitchell	Herschel	X			
	North Chainy	McClure	X			
	Pritchard	Mayo	X			
	Poplar Pond	Bangor	X			
	Stethan	Anstruther	X			
	Stick	Anstruther	X			

OPERATIONS: Habitat and Population Management - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
(i) put-grow-take - Cont'd	Twin	Cardiff	X			
	Runaround	Anstruther	X			
	Yuill	Wicklow	X			
	Round	Cardiff	X			
	Bird's Ck.	Monteagle	X			
	Deer Ck.	Wollaston	X			
	Eels Ck.	Anstruther	X			
	Papineau Ck.	McClure	X			
	Little Meach	McClure	X			
	East Chain	Mayo	X			
(Rainbow Trout):	Upper Cardiff	Cardiff	X			
	Lassuade	Chandos	X			
	Colbourne	Cardiff	X			
	Mountain	Burleigh	X			
	Jordan	Cardiff	X			
	Sleeper	Cashel	X			
	Urbach	Wollaston	X			
	V	Mayo	X			
	Cope	Cardiff	X			
	Lk.St.Peter	McClure	X			
	Lower Cardiff	Cardiff	X			
	Mountain	Anstruther	X			
(F_1 Splake):	Looncall	Anstruther	X			
	Graphite	Monteagle	X			
	McWhirter	Carlow	X			
	North	Wollaston	X			
	and other suitable waters identified through assessments			X		
(ii) put-take (provide immediate angling opportunities) (Rainbow Trout):	Graphite	Monteagle		X		
	Jordan	Cardiff		X		
	Spring	Limerick		X		
	Upr. Cardiff	Cardiff		X		
	Lwr. Cardiff	Cardiff		X		
	Sophia	Burleigh		X		
	Big McGarry	McClure		X		

OPERATIONS: Habitat and Population Management - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
(ii) put-take - Cont'd	O'Grady	Carlow		X		
	Riddel	Faraday		X		
	Banner	Faraday		X		
	Egan	Limerick		X		
	Coltson	Dungannon		X		
	and other suitable waters identified through assessments			X		
•Provide guidance and expertise to groups/individuals interested in establishing private, commercial hatcheries	District Wide		X		•Encourage innovative fisheries enhancement projects which will reduce culture costs	•Dependence on Hatchery Fish
PUBLIC EDUCATION AND INVOLVEMENT						
•Educate the public concerning the effects of less popular species on major game species	District Wide			X	•Promote use of underutilized/less popular species •Prevent further decline of key game fish populations or genetic stocks •Rehabilitate degraded fish communities	•Overharvest •Loss of Valuable Fisheries •Underproducing Waters
•Inform and educate the public as to the rationale of the fish stocking program	District Wide -on an 'on request' basis; -on a proactive basis;		X	X	•Place the importance of fish stocking in the Bancroft District into perspective	•Dependence on Hatchery Fish
•Annually print and distribute the fish stocking list	District Wide		X		•Place the importance of fish stocking in the Bancroft District into perspective	•Dependence on Hatchery Fish
•Distribute news releases on key aspects of fisheries and fisheries programs	District Wide			X	•Involve the public in key aspects of fisheries management •Educate the public with regard to fisheries ecology and the effects of stresses on fisheries	•Lack of Public Awareness and Involvement

PUBLIC EDUCATION AND INVOLVEMENT - Continued

Tactic	Location	Township	Priority 1	Priority 2	Strategies Implemented	Problems Addressed
•Set up educational displays at summer regattas	District Wide			X	•Educate the public with regard to fisheries ecology and the effects of stresses on fisheries	•Lack of Public Awareness and Involvement
•Institute regular meetings/ open houses with key interest groups to update them on fisheries programs	District Wide			X	•Involve the public in key aspects of fisheries management	•Lack of Public Awareness and Involvement
•Update fisheries information and educational booklets	District Wide			X	•Educate the public with regard to fisheries ecology and the effects of stresses on fisheries	•Lack of Public Awareness and Involvement

REFERENCE

Ministry of Natural Resources 1983. Bancroft District Land Use Guidelines. Ontario Ministry of Natural Resources, Bancroft District. 43p + Appendices.

Ministry of Natural Resources 1986. Bancroft District Fisheries Management Plan, 1987-2000. Background Information and Optional Management Strategies and Tactics -- A Summary. Bancroft District, 26p + Appendices.

Ministry of Natural Resources 1986. Bancroft District Fisheries Management Plan. Background Information (Terms of Reference, Resource Inventory and Analysis, Identification and Evaluation of Management Options). Bancroft District unpublished document. 90p + Appendices.

Ministry of Natural Resources 1986. A Summary of Public Response to Bancroft District Background Information and Optional Management Strategies and Tactics, unpublished document. 3p + Appendices.

Ministry of Natural Resources 1982. Southern Ontario Co-Ordinated Program Strategy. Policy and Planning Guidelines. Queen's Park. Toronto.

Ministry of Natural Resources 1986. District Fisheries Management Plans. Planning Manual. Ontario Ministry of Natural Resources. Unpublished document. 91p.

GLOSSARY

AQUATIC ECOSYSTEMS - a community of living organisms (plants, insects, fish, bacteria, etc.) and their environment functioning as a unit in nature.

AQUATIC SURVEY - a procedure designed to acquire basic knowledge of the chemical, physical and biological conditions of lakes and streams.

ARTIFICIAL FISHERIES - a fishery which is maintained entirely through plantings of hatchery-reared fish in order to provide angling opportunities. The native species is either depleted or no longer present.

BAITFISH - any member of the minnow family Cyprinidae, except: carp and goldfish, the mudminnow family Umbridae, the stickleback family Gasterosteidae, the trout-perch family Percopsidae, the sculpin family Cottidae, the genus Leucichthys of the whitefish family Coregonidae and the darter sub family Etheostomatinae.

BAIT FISHERY - the bait fish resource that is available for harvesting by commercial bait fish licencees and members of the public on an individual, private use basis.

BARREN WATERS - lakes or streams in which game fish species are absent.

C.F.I.P. - Community Fisheries Involvement Program.

CHEMICALLY RECLAIMED WATERS - waterbodies which have been treated with fish toxicant to eliminate the existing fish community.

COLDWATER FISHERIES - that segment of the resource that provides lake trout, brook trout, rainbow trout, splake and lake whitefish.

COMPETITIVE SPECIES - a fish species that aggressively competes for food and/or habitat which is critical to the survival of another species.

CREEL SURVEYS - a technique of interviewing anglers to obtain information concerning fish harvest, biological characteristics of the fish being caught, angler success and the fishing pressure exerted on a waterbody.

CRITICAL FISH HABITAT - consists of suitable amounts of oxygen, correct water temperatures, ample food, suitable sites for spawning, good small fish nursery areas and sufficient forage zones.

DATA BASE - a collection of factual information which is used as a basis for reasoning and making sound management decisions.

FISH COMMUNITY IMBALANCE - a change in the fish species composition of a waterbody to the extent that one species significantly declines in numbers (usually a favoured game species) while another species increases rapidly (usually less popular species).

FISHERIES ECOLOGY - the interrelationship of fish and their environment.

GENETIC STOCKS - fish populations which have existed and continue to exist through self-perpetuation and/or have developed distinct physical or chemical characteristics.

HABITAT - the place or type of place where an organism naturally or normally lives and grows.

KEY GAME FISH POPULATIONS - sport fish populations which are recreationally and economically important to the Bancroft District; i.e. lake trout, brook trout, rainbow trout, splake, walleye, muskellunge, bass and northern pike.

MARGINAL LAKE TROUT/BROOK TROUT LAKES - waterbodies in which lake trout or brook trout habitat is severely restricted.

M.O.E. - Ministry of the Environment

NON-INDIGENOUS SPECIES - fish species which are not native to the area.

OTHER SPECIES - that segment of the resource that provides lake herring, suckers, rock bass, pumpkinseed, burbot, etc.

SPORT FISHERY - fish which are important for the sport they afford anglers. In Bancroft District, this presently includes all key game fish, as well as ling, suckers, lake herring, rock bass and pumpkinseed.

STUDY LAKES - waterbodies which are studied intensively for management/scientific purposes.

THREATENED SPECIES - fish populations which have declined in numbers and show signs of impending collapse.

WARMWATER FISHERIES - that segment of the resource that provides walleye, muskellunge, northern pike, bass and yellow perch.

APPENDICES

APPENDIX 1

SYNOPSIS OF PUBLIC RESPONSE TO THE OPTIONAL MANAGEMENT STRATEGIES AND TACTICS

Overall, public responses to the management options were very supportive. They indicated very strong support for the suggested strategies and general agreement with the tactics.

In reviewing written comments received from the participants, there appeared to be several common points of view. These are presented below in order of frequency of occurrence. Also included is information indicating how each concern was addressed:

1. More fisheries enforcement is required.

   - Specific tactics such as the implementation of a District Fisheries Enforcement Plan have been added to the implementation schedule.

2. Public needs to be educated concerning fisheries needs.

   - A number of educational tactics are included in the implementation schedule; e.g. set up educational displays at summer regattas.

3. Season reductions should be implemented where required.

   - Season reductions on 15 lake trout lakes, where the need for harvest reductions has been well documented, are included in the implementation schedule.

4. Lakes should be closed for one or two years after stocking.

   - An experimental management tactic which will assist in studying this issue has been incorporated into the implementatin schedule.

5. Daily and possession limits should be reduced.

   - Data examined in conjunction with concern #3 indicated that this would not be an effective way of reducing harvests on District lake trout lakes at the present time; therefore, it was not included in the implementation schedule. Harvest monitoring is included and data collected through that tactic will help

re-evaluate the appropriateness of catch and possession limit reductions in future years. If the need to reduce harvest levels is documented for other species, daily catch and possession limit reductions will be given full consideration.

6. **More public involvement is required in fisheries program.**

   - Tactics such as encouraging fisheries enhancement projects through C.F.I.P., instituting regular meetings with interest groups, etc., are included in the implementation schedule. They should assist in improving public involvement in fisheries.

7. **Slot size limits should be implemented.**

   - This tactic has been selected for inclusion in the Plan at some date beyond the scope of the first implementation schedule. By that time, experimental management projects examining this issue will have been implemented and examined elsewhere in the Province and there should be good data available to evaluate the effectiveness of this tactic.

8. **Local private hatcheries should be encouraged.**

   - A tactic designed to encourage private commercial hatcheries locally has been included in the implementation schedule.

Of the 125 questionnaires distributed, 39 were returned, which represents a response rate of 31%. A breakdown of respondent type is presented in the following table:

TABLE 1:* Breakdown of Respondent Type

Type	Number	%
Angler	31	79
Cottager Association	4	10
Resort Owner	2	5
Fish and Game Club	1	3
Conservation Authority	1	3

*Reference - "A Summary of Public Response to Bancroft District Background Information and Optional Management Strategies and Tactics"

APPENDIX 2
KNOWN COLDWATER LAKES AND STREAMS - BANCROFT DISTRICT

(a) Surveyed Coldwater Lakes in Bancroft District - Alphabetical Listing

LAKE	TOWNSHIP
ADAMS	Cardiff
AIDE (BIG BIRCH)	Cashel
ALLEN (CROSS)	Harcourt
ANSTRUTHER (EAGLE)	Anstruther
BALDCOOT	Bangor
BAPTISTE	Herschel
BAY	Faraday
BIG LIGHTHOUSE	Herschel
BIG McGARRY	McClure
BIG MINK (BAY)	McClure
BLAIRS (BACK)	Wicklow
BOULTER	McClure
BRADLEY	Mayo
BRONSON	McClure
BUCK	Bangor
BURLEIGH	Chandos
BURNT	Faraday
BUZZARD (TROUT)	Burleigh
CARD	Faraday
CARDIFF (UPPER CARDIFF)	Cardiff
CASHEL (LITTLE SALMON)	Cashel
CEDAR	Dungannon
CENTRE	Bicroft
CHAINY (EAST)	McClure
CHAINY (NORTH)	McClure
CHAINY (WEST)	McClure
CHANDOS	Chandos
CHEDDAR (FAIRY)	Cardiff
CHERRY (BASS)	Burleigh
CHERRYTREE	Mayo
COLBOURNE (WEST)	Cardiff
COPE (MAPLE)	Cardiff
COX	Burleigh
CURRIE	Cashel
DAVIS POND	Wicklow
DEER	Bangor
DEER	Cardiff
DIAMOND	Herschel
DIXIE	Cardiff
DIXON	Limerick
DOVETAIL	Mayo

APPENDIX 2(a) - Continued
Surveyed Coldwater Lakes in Bancroft District

LAKE	TOWNSHIP
EAST	Harcourt
EAST CHAIN	Mayo
ECHO	Bangor
EELS	Anstruther
FARADAY (TROUT)	Faraday
FARQUHAR	Harcourt
FISHTAIL	Harcourt
FOURCORNER (BUCK)	Harcourt
GIL (GILL)	Anstruther
GOULAIS (UPPER MINK)	McClure
GRACE	Harcourt
GRAPHITE	Monteagle
GRASSY	Anstruther
GRASSY	Mayo
HALLS	Cardiff
HARDINGS	Cardiff
HAWK	Wicklow
HICKS (GREEN)	Bangor
HOLLAND (CLEAR)	Dungannon
HOUND	Herschel
HUDSON (CLEAR)	Cardiff
INDIAN	Wicklow
INRIGHT	Wicklow
JAMES	Bangor
JAMIESON	Dungannon
JEFFREY	Faraday
JIMMIE	Dungannon
JOHN	Limerick
JOHNSON	Wicklow
JORDAN (TROUT)	Cardiff
LAKE ON THE HILL	Faraday
LAKE ON THE MOUNTAIN	Herschel
LAKE ST. PETER	McClure
L'AMABLE	Faraday
LASSWADE (MINK)	Chandos
LAVALLEE	Faraday
LEATHER ROOT	Herschel
LEDYARD	Herschel
LIMERICK (BASS)	Limerick
LIMESTONE	Mayo
LITTLE ANSTRUTHER (LITTLE SERPENTINE)	Anstruther
LITTLE BIRCH	Cashel
LITTLECOOT	Bangor

APPENDIX 2(a) - Continued
Surveyed Coldwater Lakes in Bancroft District

LAKE	TOWNSHIP
LITTLE COPPER	Anstruther
LITTLE MAYO	Mayo
LITTLE MEACH	McClure
LONG	Burleigh
LONG	Cardiff
LOONCALL	Anstruther
LOUCKS	Burleigh
LOWER CARDIFF	Cardiff
MAWSON (MAWSON'S POND)	Cashel
MAYO (CROOKED)	Mayo
McCORMICK	Bangor
McGEE	Burleigh
McNAB	McClure
McWHIRTER (STONY)	Carlow
MEACH	McClure
MEPHISTO (DEVILS)	Cashel
MITCHELL (BYER'S)	Herschel
MITCHELL (PETE'S)	McClure
MONCK (HILLY)	Cardiff
MOUNTAIN	Anstruther
MOUNTAIN	Burleigh
MOUNTAIN	Cardiff
NORTH CHAIN	Mayo
NORTH (PINE OR LEX)	Wollaston
NORTH VANCE (TEA)	Herschel
O'BRIEN	Herschel
O'GRADY'S (GRADY)	Carlow
PAPINEAU	Bangor
PAT	McClure
PAUDASH	Cardiff
PERRY'S POND	Wicklow
POPLAR POND	Bangor
POTASH	Bangor
PRITCHARD	Mayo
PURDY	Bangor
PUSEY	Cardiff
RASPBERRY	Burleigh
RATHBUN	Anstruther
ROBINSON	Limerick
ROBISON (LOWER MINK)	McClure
ROCK	Dungannon
RUNAROUND	Anstruther

APPENDIX 2(a) - Continued
Surveyed Coldwater Lakes in Bancroft District

LAKE	TOWNSHIP
SALT (SALTY)	Carlow
SELBY	Monteagle
SHARK (OTTER)	Burleigh
SILENT	Cardiff
SILVERSHEEN	McClure
SLEEPER (SLEEPER GREEN)	Cashel
SOAKING	McClure
SOPHIA	Burleigh
SPRUCE	Mayo
STETHAN(S)	Anstruther
STICK	Anstruther
STIMEARS	Dungannon
STOPLOG	Burleigh
STRAGGLE (BIG STRAGGLE)	Harcourt
SWORDFINGAL	Mayo
SUCKER	Anstruther
TALLAN	Chandos
TIM	Herschel
TOMMIES	Cashel
TRIANGLE (SILVER)	Burleigh
TWIN LAKES (HOURGLASS)	Cardiff
UPPER PARTRIDGE (MUD TURTLE)	Cashel
URBACH	Wollaston
V	Mayo
WEST CHAIN	Mayo
WHITEDUCK (DUCK)	Bangor
WHYTE	Mayo
WICKLOW	Wicklow
WOLLASTON (EAGLE)	Wollaston
YUILL	Wicklow

APPENDIX 2
KNOWN COLDWATER LAKES AND STREAMS - BANCROFT DISTRICT

(b) Coldwater Streams in Bancroft District - Alphabetical Listing

CREEK	TOWNSHIP
AIDE	Cashel
ALLEN	Harcourt
BACK (LUCAS)	Wicklow
BENTLEY	Dungannon
BIRD	Herschel
BOULTER	McClure
BOWEN	Dungannon
CANNON	Herschel
COPE	Cardiff
CRAIGMONT	Carlow
DEER RIVER	Wollaston
EELS	Anstruther
EGAN	Dungannon
ELEPHANT	Harcourt
GREEN	McClure
HESTLER	Mayo
L'AMABLE	Dungannon
LITTLE PAPINEAU	Wicklow
McGARRY	Herschel
MEACH	McClure
MINK	McClure
PAPINEAU	McClure
QUIRK	Monteagle
ROWLAND	Mayo
SELBY	Herschel
SHARROW	Mayo
STRINGER	Mayo
TALLAN	Chandos
WHYTE	Mayo

APPENDIX 3
ASSESSMENT UNIT AND WARMWATER STUDY LAKES - BANCROFT DISTRICT

(a) Haliburton-Hastings Fisheries Assessment Unit Study Lakes in Bancroft District

LAKE	TOWNSHIP
HICKS	Bangor
LITTLE MEACH	McClure
MEACH	McClure
TURTLE	Burleigh

(b) Warmwater Study Lakes - Bancroft District

LAKE	TOWNSHIP
BANNER	Faraday
BAPTISTE	Herschel
BENOIR	Harcourt
BIG CEDAR	Burleigh
BIRD	Herschel
CARDWELL	Wicklow
ELEPHANT	Harcourt
FRASER	Carlow
JACK	Methuen
JULIAN	Burleigh
KASSHABOG	Methuen
OAK	Methuen
SALMON TROUT	Monteagle
ST. OLA	Limerick
STEENBURG	Limerick
WANAMAKER	Cashel
WATERHOUSE	Faraday
WEST TWIN	Methuen

APPENDIX 4

TACTICS SELECTED FOR USE IN THE BANCROFT DISTRICT FISHERIES MANAGEMENT PLAN BUT NOT INCORPORATED INTO THE FIRST 5-YEAR IMPLEMENTATION SCHEDULE

TACTIC	STRATEGY	PROBLEM
•Designate selected areas as fish sanctuaries	•Control harvest where required	•Overharvest
•Change daily possession limit	•Control harvest where required	•Overharvest
•Implement experimental slot size limit and gear restriction techniques	•Control harvest where required	•Overharvest
•Institute a public information campaign concerning angling techniques and recipes for less popular species	•Promote use of underutilized/less popular fish species	•Overharvest
•Institute a news release campaign to direct angling pressure to less utilized lakes	•Disperse angling pressure to less utilized lakes	•Overharvest
•Improve assessment of causes resulting in population decline	•Prevent any further decline of key game fish populations or genetic stocks	•Loss of Valuable Fisheries
•Create new fisheries habitat;	•Protect, enhance and rehabilitate critical fish habitat	•Underproducing Waters
•Initiate experimental coarse fish removal program	•Rehabilitate degraded fish communities	•Underproducing Waters
•Encourage expansion of private hatchery system by purchasing more fish from private sector for put-and-take stocking	•Promote fish culture projects by the public	•Dependence on Hatchery Fish
•Establish sanctuary donor lakes to act as reservoirs for use in adult transfers	•Encourage innovative fish culture projects which will reduce culture costs	•Dependence on Hatchery Fish
•Experiment with new culture concepts	•Encourage innovative fish culture projects which will reduce culture costs	•Dependence on Hatchery Fish
•Computerize the District fisheries data base to facilitate intelligence transfer	•Make effective use of new knowledge and technology	•Lack of an Adequate Data Base and Scientific Knowledge
•Develop a comprehensive public information and education program	•Educate the public with regard to fisheries ecology and the effects of stresses on fisheries	•Lack of Public Awareness and Involvement

APPENDIX 4 - Continued

•Create fisheries information and educational booklets	•Educate the public with regard to fisheries ecology and the effects of stresses on fisheries	•Lack of Public Awareness and Involvement
•Encourage local school boards to include fisheries studies in the science portion of the public school curriculum	•Educate the public with regard to fisheries ecology and the effects of stresses on fisheries	•Lack of Public Awareness and Involvement
•Design and distribute information packages for different user groups to help them obtain a basic understanding of fisheries needs and problems	•Promote co-operation between user groups	•Lack of Public Awareness and Involvement
•Encourage regular meetings between interest groups to discuss and/or resolve issues and potential conflicts as required	•Promote co-operation between user groups	•Lack of Public Awareness and Involvement

APPENDIX 5

CATEGORIZATION AND PRIORIZATION OF TACTICS FROM FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE, 1987-1991, BANCROFT DISTRICT

VERY CRITICAL

- Alter angling season
- Continue enforcement of existing fisheries-related acts and regulations
- Stock hatchery fish where required to:
  - (a) rehabilitate/supplement the fisheries;
  - (b) rehabilitate existing fisheries;
  - (c) supplement the fisheries;
  - (d) produce artificial fisheries.
- Identify, monitor and protect critical fish habitat; e.g. spawning bed documentation and assessment
- Enhance/rehabilitate critical fish habitat through M.N.R. and/or C.F.I.P. projects
- Assess marginal lake trout and/or brook trout lakes
- Monitor angler harvest
- Monitor important natural reproducing fisheries
- Identify and assess:
  - (a) threatened fisheries;
  - (b) natural reproducing and/or genetic stocks
- Establish or re-establish self-reproducing coldwater/ warmwater fisheries in suitable waters
- Initiate and maintain trend-through-time data on selected representative lakes and significant fisheries
- Determine factors limiting natural recruitment and eliminate or reduce these stresses

CRITICAL

- Increase effectiveness of fisheries enforcement through the implementation of a District Fisheries Enforcement Plan
- Control dredging and filling which will impair or destroy critical fish habitat

- Assess results of stocking and adjust stocking plan accordingly

- Monitor and review lakeshore development and other work-plans and proposals

- Monitor and review water-related work applications

- Conduct brief preliminary fisheries surveys on unknown waters and follow up with full aquatic surveys on those having management potential

- Distribute newsreleases on key aspects of fisheries and fisheries programs

- Convert marginal lake trout or brook trout lakes to splake

- Encourage research concerning:

    (a) the effects of rock bass on smallmouth and/or largemouth bass;
    (b) the effects of lake herring on lake trout;
    (c) alternate year closures following stocking of brook trout to determine effectiveness in improving the qualilty of angling;
    (d) practical and effective methods of controlling rock bass.

- Open/improve access to underfished waters and/or lakes having good management potential, through landowner agreements.

- Access knowledge and information from other districts, assessment units, and outside agencies.

- Restrict use of live bait in newly-reclaimed waters;

- Update fisheries information and educational booklets;

- Encourage and promote youth derbies for less popular species;

- Encourage catch/kill/use angling for less popular species; e.g. newsreleases re: recipes and angling techniques

- Institute regular meetings/open houses with key interest groups to update them on Fisheries Program

LESS CRITICAL

- Encourage fisheries enhancement projects through C.F.I.P.

- Chemically reclaim headwater lakes that have been lost to coarse fish

- Continue to work with M.O.E. to monitor and react to water quality changes

- Initiate an experimental management project; e.g. investigate alternate year closure following stocking of brook trout to determine effectiveness in improving angling quality

- Educate the public concerning the effects of less popular species on major game species

- Set up educational displays at summer regattas

- Encourage anglers to submit volunteer creel forms

- Encourage self-help programs and/or volunteer creel surveys

- Provide or expand opportunities for alternative means of fishing for underutilized species

- Organize and establish data base with respect to fish community type

- Annually promote and distribute the fish stocking list

- Inform and educate the public as to the rationale of the fish stocking program

- Provide fisheries management advice and encourage establishment of sport fisheries in private waters.